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臺南市在地米中無機砷之調查研究 Survey on Inorganic Arsenic of Local Rice in Tainan

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「砷」是自然界分布極廣的重金屬元素，其產生來源包括醫療用藥、環境用藥及地底礦石等等，常隨著降雨及灌溉進入土壤而污染糧食作物，因此以稻米為主食的臺灣民眾而言，稻米的食用安全性便是一大關注議題，而砷的型態可區分為有機砷及無機砷兩大類，以無機砷之毒性較高。本研究為瞭解臺南市在地種植的稻米中無機砷含量，針對臺南市農民種植之糙米及賣場販售之白米進行抽驗，共計 31 件稻米(糙米 21 件及白米 10 件)，檢測其重金屬無機砷含量。檢驗方法係依據 107 年 11 月 1 日衛授食字第 1071902243 公告訂定之米中無機砷之檢驗方法，以感應耦合電漿質譜儀(ICP/MS)進行檢驗分析。31 件稻米中重金屬無機砷含量範圍為 0.039~0.283 $\mu\text{g/g}$ ，其中 21 件糙米無機砷含量範圍為 0.184~0.283 $\mu\text{g/g}$ ，10 件白米無機砷含量範圍為 0.039~0.115 $\mu\text{g/g}$ 。本調查所抽驗 31 件稻米檢體均符合衛生福利部公告「食品中污染物質及毒素衛生標準」之規定，合格率為 100%。本研究之目的主要是監測臺南市在地稻米是否符合法規衛生標準，保障消費者之稻米食用安全，其調查結果亦可為政府有關單位於行政管理之參考。

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Survey on Inorganic Arsenic of Local Rice in Tainan

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Arsenic is a heavy metal element, which distributed very broadly in natural environment; it is generated from Medical medication, Environmental medication and mines underneath the earth, etc. Arsenic is always polluting food through the soil and this is one serious food safety issue for Taiwan people because the rice is main daily food here. There are two types of Arsenic, organic and inorganic; the latter is more toxic than previous one. The survey is trying to understand the content of inorganic Arsenic in local planted rice, thus we are collecting 31 rice samples in total (21/10 for brown and white rice respectively) to examine inorganic Arsenic from local farmer and hypermarket both in Tainan. The examination method is based on the official 1071902243 announcement 「Examination of inorganic Arsenic in rice」 in 11/01/2018, using ICP/MS as analytical instrument. The examination result shows 0.039~0.283 $\mu\text{g/g}$ inorganic Arsenic concentration for 31 rice samples. Meanwhile, the inorganic Arsenic concentration for 21 brown rice and 10 white rice is 0.184~0.283 $\mu\text{g/g}$ and 0.039~0.115 $\mu\text{g/g}$ respectively. The examination result of 31 samples match TFDA's regulation of 「The health standard of pollution and toxin in food」. The main purpose of this survey is monitoring if the local rice really meets the regulation of health standard and secure the food safety for Tainan people in parallel. This survey can be a reference for related departments in Tainan city government.